

## **DETAILED ACTION**

### ***Response to Amendment***

1. Claims 2-4, 12, 14-15 have been canceled. Claims 1, 6-7, 9-10, 24-25, 27-33 have been amended. Claims 1, 5-11, 13, 16-33 are pending.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1, 5-11, 13, 16-28 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 5-11, 13, 16-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 lines 3-13 limitation "*establishing a first connection between an external application and the shell VM to transfer information between the external application and the core VM via the shell VM and a communication link between the shell VM and the core VM;*

*establishing a second connection between the shell VM and the core VM such that the information between the external application and the core VM is transferred via the shell VM and the second connection instead of the communication link; and stitching the first connection and the second connection to redirect the information between the external application and the core VM, including by bypassing the shell VM to reduce load on the shell VM, and transferring the data via a portion of the first connection and a portion of the second connection*" is indefinite.

7. Line 11 recites *including by bypassing*. It is unclear whether -- *including bypassing* -- was intended.

8. The *first connection* is between an external application and the shell VM. The *second connection* is between the shell VM and the core VM. It is unclear how the shell VM will be bypassed after *stitching the first connection and the second connection*. It appears that the shell VM would still be within the communication path.

9. Claim 29 lines 6-16 limitation "*establish a first connection between an external application and the shell VM to transfer information between the external application*

*and the core VM via the shell VM and a communication link between the shell VM and the core VM;*

*establish a second connection between the shell VM and the core VM such that the information between the external application and the core VM is transferred via the shell VM and the second connection instead of the communication link; and stitch the first connection and the second connection to redirect the information between the external application and the core VM, including by bypassing the shell VM to reduce load on the shell VM, and transferring the data via a portion of the first connection and a portion of the second connection" is indefinite.*

10. Line 14 recites *including by bypassing*. It is unclear whether -- *including bypassing* -- was intended.

11. The *first connection* is between an external application and the shell VM. The *second connection* is between the shell VM and the core VM. It is unclear how the shell VM will be bypassed after *stitching the first connection and the second connection*. It appears that *the shell VM* would still be within the communication path.

12. Claim 10 lines 1-2 limitation *a packet received by the external includes a translated address* is indefinite. It is unclear whether *a packet received by the external -- application -- includes a translated address*; was intended.

13. Claims 32 and 33 line 3, proper antecedent basis: If a *shell VM* is the same *shell VM*, recited in the parent claim - would expect -- the -- *shell VM*.

14. Claims 32 line 6, proper antecedent basis: If a *switch* is the same *switch*, recited in the parent claim - would expect -- the -- *switch*.

15. Claims 1, 5-11, 13, 16-28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: As seen in the drawings; e.g. Fig 2 phases 1-3 and Fig 3A, from the disclosure, there are additional, essential steps, which are critical to performing the functions of *stitching*, *redirecting*, and *bypassing*.

16. Claims 29-33 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: As seen in the drawings; e.g. Fig 2 phases 1-3 and Fig 3A, from the disclosure, there are additional, essential cooperative relationships between the *switch*, the *shell VM*, the *core VM*, and the *external application*, which are critical to performing the functions of *stitching*, *redirecting*, and *bypassing*.

### ***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 1, 5, 6, 7, 13, 22-24, 29 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas (US 6138020 A), in view of McGuire (US 20030097360 A1), and further in view of Williams (US 20030055877 A1).

**Claim 1.** Galyas teaches a method of redirecting information; *initially sending information* (11:66-12:14 information that is being routed to mobile station) *to a machine* (11:66-12:14 first base station controller that has been communication with the mobile station); *and redirecting the information to bypass the machine* (11:66-12:14 handover; Figures 1, 1a, 2, 2a).

Galyas does not disclose *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM; FIGS. 1 and 2) *the machine includes a virtual machine - e.g. a shell VM*.

The combination of McGuire with Galyas teaches *sending information to a shell VM; and redirecting the information to bypass the shell VM*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

Galyas does not disclose *establishing a connection between an external application and the VM*.

In the same field of endeavor, Williams teaches ([0035] external application module executing on a remote computer processor within a JAVA Virtual Machine) *establishing a connection between an external application and the VM.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to *connect virtual machine* at various locations that the Mobile Station connects to and *an external application* – so that the Mobile Station runs applications remotely.

Galyas does not disclose *establishing a connection between the shell VM and a core VM.*

In the same field of endeavor, McGuire teaches *establishing a connection between the shell VM and a core VM* ([0050] Java virtual machine VM) ([0073] information being accessed, master Java VM, client Java VM).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs applications remotely.

Galyas does not disclose *establishing a first connection between an external application and the shell VM.*

In the same field of endeavor, Williams teaches ([0035] an external application module executing on a remote computer processor within a JAVA Virtual Machine) *establishing a first connection between an external application and the shell VM.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to *connect virtual machine* at various locations that the Mobile Station connects to and *an external application* – so that the Mobile Station runs applications remotely.

Galyas does not disclose *establishing a second connection between the shell VM and a core VM*.

In the same field of endeavor, McGuire teaches *establishing a second connection between the shell VM and a core VM: ([0050] Java virtual machine) the machine includes a virtual machine, and the virtual machines are connected ([0073] master Java VM, client Java VM itself)*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs applications remotely.

Galyas further teaches *stitching the first connection and the second connection* (11:66-12:14 switch, in the second Base Station Controller will then stitch the channels to the correct Base Transceiver Station, will transmit to, and from, the Mobile Station after completion of the handover).

**Claim 5.** Galyas further teaches *redirecting includes receiving the information at a switch* (11:66-12:14 a switch in the second Base Station Controller will then stitch the

channels to the correct Base Transceiver Station, under its control and will transmit to, and from, the Mobile Station 30 after completion of the handover).

**Claim 6.** Galyas further teaches *the information is redirected to a machine* (11:66-12:14 handover).

Galyas does not disclose *the information is redirected to a VM.*

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine) *machine is a virtual machine – e.g. a core VM.*

The combination of McGuire with Galyas discloses *the information is redirected to a core VM.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads.

**Claim 7.** Galyas further teaches *the information is redirected* (11:66-12:14 handover).

Galyas does not disclose *the information is redirected to an external application.*

In the same field of endeavor, Williams teaches ([0035] external application module executing on a remote computer processor within a JAVA Virtual Machine JVM communicates, makes a call via JAVA RMI, with application server facility to request service, application module, a JAVA servant) *an external application.*



The combination of Williams with Galyas discloses *the information is redirected to an external application*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to *connect virtual machine* at various locations that the Mobile Station connects to and *an external application* – so that the Mobile Station runs applications remotely.

**Claim 13.** Galyas further teaches *determining that the information should be redirected* (11:66-12:14 handover).

**Claim 22.** Galyas further teaches *a switch* (11:66-12:14 handover the switch 120) *and a machine redirects the information* (11:66-12:14 second Base Station Controller 51).

Galyas does not disclose *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM) *the machine includes a virtual machine - .e.g. a core VM*.

The combination of McGuire with Galyas discloses *a device that includes a switch and a core VM redirects the information*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

**Claim 23.** Galyas further teaches *a switch* (11:66-12:14 handover the switch 120) *and a machine redirects the information* (11:66-12:14 second Base Station Controller 51).

Galyas does not disclose *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine) *the machine includes a virtual machine - .e.g. a shell VM*.

The combination of McGuire with Galyas discloses *a device that includes a switch and a shell VM redirects the information*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

**Claim 24.** Galyas further teaches *a switch* (11:66-12:14 handover the switch 120) *and machines* (11:66-12:14 first Base Station Controller, second Base Station Controller 51) *redirect the information* (11:66-12:14 handover).

Galyas does not disclose *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM) *the machine includes a virtual machine - .e.g. a shell or core VM*.

The combination of McGuire with Galyas discloses *a device that includes the shell VM, a core VM, and a switch redirects the information*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

**Claim 29.** Galyas teaches a system of redirecting information; *initially sending information* (11:66-12:14 information that is being routed to mobile station) *to a machine* (11:66-12:14 first base station controller that has been communication with the mobile station), *and a switch configured to redirect the information to bypass the machine* (11:66-12:14 handover the switch 120).

Galyas does not disclose *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM) *the machine includes a virtual machine – e.g. a shell VM*.

The combination of McGuire with Galyas teaches *a device configured to send information to a shell VM; and a switch configured to redirect the information to bypass the shell VM*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

Galyas does not disclose *establishing a connection between an external application and the VM*.

In the same field of endeavor, Williams teaches ([0035] external application module executing on a remote computer processor within a JAVA Virtual Machine) *establishing a connection between an external application and the VM*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to *connect virtual machine* at various locations that the Mobile Station connects to and *an external application* – so that the Mobile Station runs applications remotely.

Galyas does not disclose *establishing a connection between the shell VM and a core VM*.

In the same field of endeavor, McGuire teaches *establishing a connection between the shell VM and a core VM* ([0050] Java virtual machine VM) ([0073] information being accessed, master Java VM, client Java VM).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs applications remotely.

Galyas does not disclose *establishing a first connection between an external application and the shell VM*.

In the same field of endeavor, Williams teaches ([0035] an external application module executing on a remote computer processor within a JAVA Virtual Machine) *establishing a first connection between an external application and the shell VM.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to *connect virtual machine* at various locations that the Mobile Station connects to and *an external application* – so that the Mobile Station runs applications remotely.

Galyas does not disclose *establishing a second connection between the shell VM and a core VM.*

In the same field of endeavor, McGuire teaches *establishing a second connection between the shell VM and a core VM: ([0050] Java virtual machine) the machine includes a virtual machine, and the virtual machines are connected ([0073] master Java VM, client Java VM itself).*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs applications remotely.

Galyas further teaches *stitching the first connection and the second connection* (11:66-12:14 switch, in the second Base Station Controller will then stitch the channels to the correct Base Transceiver Station, will transmit to, and from, the Mobile Station after completion of the handover).

**Claim 30.** Galyas does not disclose *device includes an external application*.

In the same field of endeavor, Williams teaches ([0035] an external application module executing on a remote computer processor within a JAVA Virtual Machine JVM communicates, makes a call via JAVA RMI, with application server facility to request service) *device includes an external application*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to include an external application – so that the Mobile Station runs applications remotely.

**Claim 31.** Galyas does not disclose *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM functions as a virtual operating system, supporting Java application, including multiple threads; FIGS. 1 and 2) *the machine includes a virtual machine - .e.g. a core VM*.

The combination of McGuire with Galyas discloses *a device that includes a core VM*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

19. Claims 8, 9, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Albert (US 20020141401 A1).

**Claim 8.** Galyas further teaches *the information is included in a connection* (11:66-12:14 transmit to, and from, the Mobile Station).

Galyas does not explicitly disclose *the information is included in a TCP packet or TCP connection*.

In the same field of endeavor, Albert discloses ([0094] client establishes a TCP connection with a virtual machine having a virtual IP address, client sends a SYN packet with a destination address corresponding to the virtual IP address, SYN packet is received by forwarding agent, forwards the SYN packet to service manager) *TCP packet or TCP connection*.

The combination of Albert with Galyas discloses *the information is included in a TCP packet or TCP connection*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Albert with Galyas – thus modifying Galyas to utilize TCP information – to distribute packets among multiple tiers of network appliances.

**Claim 9.** Galyas further teaches *information received by one machine appears to have been sent by another machine* (11:66-12:14 first Base Station Controller, second Base Station Controller).

Galyas does not disclose *virtual machines*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM) *virtual machines*.

The combination of McGuire with Galyas discloses *information received by one virtual machine appears to have been sent by another virtual machine – e.g. information received by a core virtual machine appears to have been sent by a shell virtual machine*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

Galyas does not explicitly disclose *redirecting includes translating an address within a packet*.

In the same field of endeavor, Albert discloses ([0094] client establishes a TCP connection with a virtual machine having a virtual IP address, client sends a SYN packet with a destination address corresponding to the virtual IP address, SYN packet is received by forwarding agent, forwards the SYN packet to service manager) *translating an address within a packet*.



The combination of Albert with Galyas discloses *redirecting includes translating an address within a packet*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Albert with Galyas – thus modifying Galyas to utilize destination address information – to distribute packets among multiple tiers of network appliances.

**Claim 10.** Galyas further teaches *information received by one machine appears to have been sent by another machine* (11:66-12:14 handover; first Base Station Controller; second Base Station Controller r).

Galyas does not disclose *virtual machines*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM functions as a virtual operating system, supporting Java application, including multiple threads; FIGS. 1 and 2) *virtual machines*.

The combination of McGuire with Galyas discloses *information received by one machine appears to have been sent by another virtual machine – e.g. information received by one machine appears to have been sent by a shell virtual machine*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* at various locations that the Mobile Station connects to – so that the Mobile Station runs a plurality of threads remotely.

Galyas does not disclose *an external application*.

In the same field of endeavor, Williams teaches ([0035] an external application module executing on a remote computer processor within a JAVA Virtual Machine JVM communicates, makes a call via JAVA RMI, with application server facility to request service) *an external application*.

The combination of Williams with Galyas discloses *information received by an external application appears to have been sent by another machine*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Williams with Galyas – thus modifying Galyas to *connect virtual machine* at various locations that the Mobile Station connects to and *an external application* – so that the Mobile Station runs applications remotely.

The combination of McGuire and Williams with Galyas discloses *a packet received by an external application appears to have been sent by the shell VM*.

Galyas does not explicitly disclose *redirecting includes translating an address within a packet*.

In the same field of endeavor, Albert discloses ([0094] client establishes a TCP connection with a virtual machine having a virtual IP address, client sends a SYN packet with a destination address corresponding to the virtual IP address, SYN packet is received by forwarding agent, forwards the SYN packet to service manager) *translating an address within a packet..*

The combination of Albert with Galyas discloses *redirecting includes translating an address within a packet*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Albert with Galyas – thus modifying Galyas to utilize destination address information – to distribute packets among multiple tiers of network appliances.

**Claim 11.** Galyas further teaches *information redirecting* (11:66-12:14 handover).

Galyas does not explicitly disclose *redirecting includes translating an address within a packet*.

In the same field of endeavor, Albert discloses ([0094] client establishes a TCP connection with a virtual machine having a virtual IP address, client sends a SYN packet with a destination address corresponding to the virtual IP address, SYN packet is received by forwarding agent, forwards the SYN packet to service manager) *translating an address within a packet..*

The combination of Albert with Galyas discloses *redirecting includes translating an address within a packet*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Albert with Galyas – thus modifying Galyas to utilize destination address information – to distribute packets among multiple tiers of network appliances.

20. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Simelius (US 20040001474 A1).

**Claim 16.** Galyas further teaches *the information is redirected* (11:66-12:14 handover).

Galyas does not teach *the information is redirected once a connection associated with the information lasts longer than a certain period of time*.

In the same field of endeavor, Simelius teaches ([0006] does not allow the connection to be maintained for periods longer than the time preset in the counter) *connection associated with the information lasts longer than a certain period of time*.

The combination of Simelius with Galyas discloses *the information is redirected once a connection associated with the information lasts longer than a certain period of time*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Simelius with Galyas, thus modifying Galyas to implement a time out feature, so that the system resources are not monopolized by one connection.

21. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Kaneko (US 20040193895 A1).

**Claim 17.** Galyas further teaches *the information is redirected* (11:66-12:14 handover).

Galyas does not teach *the information is redirected once a connection associated with the information sends more than a certain number of packets.*

In the same field of endeavor, Kaneko discloses ([0062] packet check, monitors the number of packets with a specific destination port number transmitted) *a connection associated with the information sends more than a certain number of packets.*

The combination of Kaneko with Galyas discloses *the information is redirected once a connection associated with the information sends more than a certain number of packets.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Kaneko with Galyas, thus modifying Galyas to implement a packet transmission monitoring feature, so that the system security is maintained.

22. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Coile (US 6104717 A).

**Claim 18.** Galyas further teaches *the information is redirected* (11:66-12:14 handover).

Galyas does not teach *the information is redirected once the shell VM device carries a certain load.*

In the same field of endeavor, Coile teaches (14:6–29 all of the physical machines can handle the traffic load for the virtual machine but the traffic load would be sufficient to overwhelm the remaining physical machines if one or more of the other physical machines failed) *VM device- .e.g. a shell VM - carries a certain load.*

The combination of Coile with Galyas discloses *the information is redirected once the shell VM device carries a certain load.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Coile with Galyas, thus modifying Galyas to implement a back up machine strategy and transfer the load beyond a particular threshold, so that the system becomes fault tolerant.

23. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Herkerdorf (US 20040146044 A1).

**Claim 19.** Galyas does not teach *receiving a message indicating sending has been completed; and sending a control message.*

In the same field of endeavor, Herkerdorf discloses ([0054] last data packet of one TCP session has a FIN control bit, FIG. 4, set in the TCP header, FIN message is parsed, FIG. 1, header parser sends a control signal) *receiving a message indicating sending has been completed; and sending a control message.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Herkerdorf with Galyas, thus modifying Galyas to implement a task completion algorithm, to close a connection when the communication session is over.

24. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Maturana (US 20020035681 A1).

**Claim 20.** Galyas does not teach *receiving a message indicating that sending has been completed; and forwarding the message.*

In the same field of endeavor, Maturana teaches ([0056] if a frame relates to TCP connection termination, the non-proxy agent will forward the frame to the server) *receiving a message indicating that sending has been completed; and forwarding the message.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Maturana with Galyas, thus modifying Galyas to implement task completion algorithms, to close a connection when the communication session is over.

25. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Murakami (US 7203757 B2).

**Claim 21.** Galyas does not teach *receiving a message indicating that sending has been completed; translating the message; and sending the translated message.*

In the same field of endeavor, Murakami teaches ( 4:46-5:17 when receiving the packet from the client, the translation device records the FIN DATA, and sends a packet in which the SYN is set to the server, the translation device sends an ACK to the server in response to the request received together with the FIN DATA) *receiving a message indicating that sending has been completed; translating the message; and sending the translated message.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Murakami with Galyas, thus modifying Galyas to implement task completion algorithms, to close a connection when the communication session is over.

26. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, in view of Chang (US 7249347 B2), and further in view of Banker (US 20030156552 A1).



**Claim 25.** Galyas further teaches *stitching the first connection and the second connection* (11:66-12:14 switch, in the second Base Station Controller will then stitch the channels to the correct Base Transceiver Station, will transmit to, and from, the Mobile Station after completion of the handover).

Galyas does not explicitly teach *determining whether a switch is capable of stitching*.

In the same field of endeavor, Chang discloses *determining whether a switch is capable of stitching*.

(9:43-67 the stitching process can determine that switch port 1 is connected to host server, switch port 2 is connected to the NAS drive, and switch port 3 is connected to the SAN).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Chang with Galyas to automate topology and capability discovery.

Galyas does not explicitly teach *sending a discovery packet; receiving a reply to the discovery packet*.

In the same field of endeavor, Banker discloses ([0014] topology discovery messages) *sending a discovery packet; receiving a reply to the discovery packet*.

The combination of Banker with Chang and Galyas teaches *sending a discovery packet; receiving a reply to the discovery packet; and determining whether a switch is capable of stitching based on the reply.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Banker with Chang and Galyas – thus modifying Galyas to utilize discovery packets in the stitching determination process, to automate topology discovery.

27. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 22 above, and further in view of Lee (US 6785245 B1).

**Claim 26.** Galyas does not disclose *determining the number of ingress and egress points on a device.*

In the same field of endeavor, Lee teaches (8:1-12 On receipt of a graft request, the ingress node determines whether the addition of another egress point exceeds a maximum number of egress points dictated by a service level specification) *determining the number of ingress and egress points on a device.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Lee with Galyas – thus modifying Galyas to monitor the number of egress points at an ingress node – to control

the number of egress points at an ingress node in a multicast tree in a differentiated services.

28. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 1 above, and further in view of Dowling (US 6636499 B1).

**Claim 27.** Galyas does not disclose *receiving the discovery packet at a switch; and sending a response indicating a capability of the switch.*

In the same field of endeavor, Dowling discloses a method of responding to a discovery packet comprising: *receiving the discovery packet at a switch* (4:56-67 discovery protocol logic receives discovery protocol packets); *and sending a response indicating a capability of the switch* (Fig. 2B; 4:56-67 discovery protocol logic processes, and sends discovery protocol packets to neighboring network devices on the network) (10:40-67).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Dowling with Galyas – thus modifying Galyas to include cluster architecture detection capability – to automatically discover networks.

29. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 24 above, and further in view of Dowling.

**Claim 28.** Galyas does not disclose *determining whether the switch is one hop away from the device that sent the discovery packet.*

In the same field of endeavor, Dowling teaches (13:29-65 device is downstream of a member if it is one CDP hop further away from the commander than is the member) *determining whether the switch is one hop away from the device that sent the discovery packet.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Dowling with Galyas – thus modifying Galyas to include cluster architecture detection capability – to automatically discover networks.

30. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 29 above; in view of Chang, and further in view of Banker.

**Claim 32.** Galyas does not explicitly disclose *a machine configured to determine whether a switch is capable of stitching.*

In the same field of endeavor, Chang discloses *a machine configured to determine whether a switch is capable of stitching* (9:43-67 the stitching process can determine that switch port 1 is connected to host server, switch port 2 is connected to the NAS drive, and switch port 3 is connected to the SAN).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Chang with Galyas to automate topology and capability discovery process.

Galyas does not teach *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM functions as a virtual operating system, supporting Java application, including multiple threads; FIGS. 1 and 2) *the machine includes a virtual machine - e.g. a shell VM*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Galyas to contain *virtual machines* – so that the machine runs a plurality of threads.

Galyas does not teach *sending a discovery packet; receiving a reply to the discovery packet*.

In the same field of endeavor, Banker discloses ([0014] topology discovery messages) *sending a discovery packet; receiving a reply to the discovery packet*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Banker with Galyas – thus

modifying Galyas to utilize discovery packets in the stitching determination process, to automate topology discovery.

The combination of the above references teaches *a shell VM configured to: send a discovery packet; receive a reply to the discovery packet; and determine whether a switch is capable of stitching based on the reply; and a switch configured to send a reply to the discovery packet.*

31. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galyas, in view of McGuire, in view of Williams as applied to claim 29 above; and further in view of Dowling.

**Claim 33.** Galyas does not explicitly disclose *a machine configured to send the discovery packet; and a switch configured to: receive the discovery packet; and respond with a capability of the switch*

In the same field of endeavor, Dowling discloses *a machine configured to send the discovery packet; and a switch configured to: receive the discovery packet; and respond with a capability of the switch* (Fig. 2B; 4:56-67 discovery protocol logic receives, processes, and sends discovery protocol packets to neighboring network devices on the network) (FIG. 13, FIG. 14; 10:40-67; 13:29-65).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Dowling with Galyas to automate topology and capability discovery process.

Galyas does not teach *the machine includes a virtual machine*.

In the same field of endeavor, McGuire teaches ([0050] Java virtual machine VM functions as a virtual operating system, supporting Java application, including multiple threads; FIGS. 1 and 2) *the machine includes a virtual machine - e.g. a shell VM*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of McGuire with Galyas – thus modifying Dowling to contain *virtual machines* – so that the machine runs a plurality of threads.

The combination of the above references teaches *a shell VM configured to send the discovery packet; and a switch configured to: receive the discovery packet; and respond with a capability of the switch*.

### ***Response to Arguments***

32. Applicant's arguments with respect to amended claims have been considered but are moot in view of the new ground(s) of rejection of the claims - on an as best understood basis.

### ***Conclusion***

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hooman Houshmand whose telephone number is (571) 270-1817. The examiner can normally be reached on Monday - Friday 8am - 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. H./  
Examiner, Art Unit 2465

/Jayanti K. Patel/  
Supervisory Patent Examiner, Art Unit 2465